

## MARKED-UP VERSION OF ABSTRACT

[Electrode active materials comprising lithium or other alkali metals, a transition metal, a phosphate or similar moiety, and a halogen or hydroxyl moiety. The electrode actives include those of the formula:] The present invention relates to novel electrode active materials represented by the general formula  $A_aM_b(XY_4)_cZ_d$ , wherein:

- (a) A is [selected from the group consisting of Li, Na, K, and mixtures thereof] one or more alkali metals, and  $0 < a \leq [8] \underline{6}$ ;
- (b) M [comprises one or more metals, comprising] is at least one metal [which is] capable of undergoing oxidation to a higher valence state, and  $1 \leq b \leq 3$ ;
- (c)  $XY_4$  is selected from the group consisting of  $X'O_{4-x}Y'_x$ ,  $X'O_{4-y}Y'_{2y}$ ,  $X''S_4$ , [or] and a mixture thereof, where  $X'$  is P, As, Sb, Si, Ge, S, [or a mixture thereof] and mixtures thereof;  $X''$  is P, As, Sb, Si, Ge, [or a mixture thereof] and mixtures thereof[:];  $Y'$  is halogen,  $0 \leq x < 3$ [:];  $0 < y < 4$ [:]; and  $0 < c \leq 3$ ; and
- (d) Z is OH, a halogen, or mixtures thereof, and  $0 < d \leq 6$  [:]; and wherein M, X, Y, Z, a, b, c, d, x and y are selected so as to maintain electroneutrality of said compound.

In a preferred embodiment, M comprises two or more transition metals from Groups 4 to 11 of the Periodic Table. In another embodiment, M comprises  $M'_{1-m}M''_m$ , where  $M'$  is at least one transition metal from Groups 4 to 11 of the Periodic Table;  $M''$  is at least one element from Groups 2, 3, 12, 13 or 14 of the Periodic Table, and  $0 < m < 1$ . Preferred embodiments include those having where  $c = 1$ , those where  $c = 2$ , and those where  $c = 3$ . Preferred embodiments include those where  $a \leq 1$  and  $c = 1$ , those where  $a = 2$  and  $c = 1$ , and those where  $a \leq 3$  and  $c = 3$ . This invention also provides electrodes comprising an electrode active material of this

